SECTION 300 – AGGREGATE PAVEMENT AND BASES

SECTION 301 – AGGREGATE BASE

301.01 Description. This work shall consist of placing a dense-graded compacted aggregate on a prepared subgrade in accordance with 105.03.

MATERIALS

301.02 Materials. Materials shall be in accordance with the following:

Coarse Aggregate, Class D or Higher, Size No. 53 904

CONSTRUCTION REQUIREMENTS

301.03 Preparation of Subgrade. Subgrade shall be compacted in accordance with 207.04. In areas of 150 m (500 ft) or less in length, or for temporary runarounds, proofrolling will not be required. Proofrolling will not be required in trench sections where proofrolling equipment cannot be used.

301.04 Temperature Limitations. Aggregate shall not be placed when the air temperature is less than 2°C (35°F). Aggregate shall not be placed on a frozen subgrade. Frozen aggregates shall not be placed.

301.05 Spreading. The aggregate shall be spread in uniform lifts with a spreading and leveling device approved by the Engineer. The spreading and leveling device shall be capable of placing aggregate to the depth, width, and slope specified. The compacted depth of each lift shall be a minimum of 75 mm (3 in.) and a maximum of 150 mm (6 in.). The aggregate shall be handled and transported to minimize segregation and the loss of moisture. In areas inaccessible to mechanical equipment, approved hand spreading methods may be used.

301.06 Compacting. Aggregates shall be immediately compacted to a minimum of 100% of the maximum dry densities in accordance with AASHTO T 99. Compaction equipment shall be in accordance with 409.03(d). Density of the compacted aggregate will be determined in accordance with 203.24(b). The aggregate shall meet the compaction requirements at the time subsequent courses are placed. In areas inaccessible to compaction equipment such as private drives, mailbox approaches, and temporary runarounds, the compaction requirements may be accepted by visual inspection.

All displacement or rutting of the aggregate shall be repaired prior to placing subsequent material.

301.07 Checking and Correcting Base. The top of each aggregate course shall be checked transversely to the cross section and all deviations in excess of 13 mm (1/2 in.) shall be corrected. If additional aggregate is required, the course shall be remixed and re-compacted.

301.08 Priming. A prime coat, when required, shall be in accordance with 405.

301.09 Method of Measurement. Compacted aggregate base will be measured by the megagram (ton) in accordance with 109.01(b).

301.10 Basis of Payment. The accepted quantities of compacted aggregate base will be paid for at the contract unit price per megagram (ton), complete in place.

Payment will be made under:

Pay Item	Metric Pay Unit Symbol (English Pay Unit Symbol)
Compacted Aggregate, No. 53, Base	Mg (TON)

The cost of placing, compacting, water, and necessary incidentals shall be included in the costs of the pay item.

Payment will not be made for material placed outside of a one to one slope from the planned typical section.

Replacement of pavement damaged by the Contractor's operations shall be at no additional payment.

SECTION 302 - SUBBASE

302.01 Description. This work shall consist of a foundation course of selected materials, placed and compacted on a prepared subgrade in accordance with 105.03.

Subbase for PCCP shall consist of 75 mm (3 in.) of coarse aggregate No. 8 as the aggregate drainage layer placed over a 150 mm (6 in.) coarse aggregate No. 53 as the separation layer. Dense graded subbase shall consist of a 150 mm (6 in.) coarse aggregate No. 53.

MATERIALS

302.02 Materials. Materials shall be in accordance with the following:

Coarse Aggregate, Class B or Higher, Size No. 8.....904
Coarse Aggregate, Class D or Higher, Size No. 53.....904

Coarse aggregate No. 8 used as an aggregate drainage layer shall consist of 100% crushed stone or ACBF.

CONSTRUCTION REQUIREMENTS

302.03 Preparation of Subgrade. Subgrade shall be prepared in accordance with 207.

302.04 Temperature Limitations. Aggregate shall not be placed when the air temperature is less than 2°C (35°F). Aggregate shall not be placed on a frozen subgrade. Frozen aggregates shall not be placed.

302.05 Spreading. The aggregate shall be spread in uniform lifts with a spreading and leveling device approved by the Engineer. The spreading and leveling device shall be capable of placing aggregate to the depth, width, and slope specified. The compacted depth of each lift shall be a minimum of 75 mm (3 in.) and a maximum of 150 mm (6 in.). The aggregate shall be handled and transported to minimize segregation and the loss of moisture. In areas inaccessible to mechanical equipment, approved hand spreading methods may be used.

302.06 Compacting. Subbases shall be compacted as follows:

(a) Aggregate Separation Layers and Dense Graded Subbase. Compaction shall be in accordance with 301.06.

All displacement or rutting of the aggregate separation layers shall be repaired prior to placing subsequent material.

(b) Aggregate Drainage Layers. Compaction shall consist of two passes with a vibratory roller before trimming, and one pass with the same roller in static mode after trimming. A vibratory roller shall be equipped with a variable amplitude system, a speed control device, and have a minimum vibration frequency of 1000 vibrations per min. A roller in accordance with 409.03(d)4 may be used.

All displacement or rutting of the aggregate drainage layers shall be repaired prior to placing subsequent material.

In areas inaccessible to standard size compacting equipment a specialty roller/compactor in accordance with 409.03(d)6 shall be used.

302.07 Checking and Correcting Subbase. The top of each aggregate course shall be checked transversely and all deviations in excess of 13 mm (1/2 in.) shall be corrected. If additional aggregate is required, the course shall be remixed and recompacted.

302.08 Method of Measurement. Subbase for PCCP or dense graded subbase will be measured by the cubic meter (cubic yard) based on the theoretical volume to the neat lines as shown on the plans. The quantity shown in the Schedule of Pay Items will be adjusted if it is shown to be different by more than 2% than the measured quantity.

302.09 Basis of Payment. The accepted quantities of subbase for PCCP or dense graded subbase will be paid for at the contract price per cubic meter (cubic yard), complete in place.

Payment will be made under:

Pay Item	Metric Pay Unit Symbol (English Pay Unit Symbol)
Dense Graded Subbase	m3 (CYS)
Subbase for PCCP	m3 (CYS)

The cost of compacting, water, aggregates placed outside neat lines as shown on the plans, and necessary incidentals shall be included in the cost of the subbase.

SECTION 303 - AGGREGATE PAVEMENTS OR SHOULDERS

303.01 Description. This work shall consist of placing a dense-graded compacted aggregate on prepared subgrade in accordance with 105.03.

MATERIALS

303.02 Materials. Materials shall be in accordance with the following:

Coarse Aggregate, Class D or Higher, Size No. 53	904
Coarse Aggregate, Class D or Higher, Size No. 73*	904

* Surface courses only, when specified

CONSTRUCTION REQUIREMENTS

303.03 Preparation of Subgrade. Subgrade shall be compacted in accordance with 207.04. In areas of 150 m (500 ft) or less in length, or for temporary runarounds, proofrolling will not be required. Proofrolling will not be required in trench sections where proofrolling equipment cannot be used.

303.04 Temperature Limitations. Aggregate shall not be placed when the air temperature is less than 2°C (35°F). Aggregate shall not be placed on a frozen subgrade. Frozen aggregates shall not be placed.

303.05 Spreading. The aggregate shall be spread in uniform lifts with a spreading and leveling device approved by the Engineer. The spreading and leveling device shall be capable of placing aggregate to the depth, width, and slope specified. The compacted depth of each lift shall be a minimum of 75 mm (3 in.) and a maximum of 150 mm (6 in.). The aggregate shall be handled and transported to minimize segregation and the loss of moisture. In areas inaccessible to mechanical equipment, approved hand spreading methods may be used.

303.06 Compacting. Aggregates shall be immediately compacted to a minimum of 100% of the maximum dry densities in accordance with AASHTO T 99. Compaction equipment shall be in accordance with 409.03(d). Density of the compacted aggregate will be determined in accordance with 203.24(b). The aggregate shall meet the compaction requirements at the time subsequent courses are placed. In areas inaccessible to compaction equipment such as private drives, mailbox approaches, and

temporary runarounds, the compaction requirements may be accepted by visual inspection.

All displacement or rutting of the compacted aggregate shall be repaired prior to placing subsequent material.

303.07 Checking and Correcting Base and Surface. The top of each aggregate course shall be checked transversely and all deviations in excess of 13 mm (1/2 in.) shall be corrected. If additional aggregate is required, the course shall be remixed and re-compacted.

303.08 Dust Palative. A dust palative, if required, shall be in accordance with 407.

303.09 Method of Measurement. Compacted aggregate will be measured by the megagram (ton) in accordance with 109.01(b) for the type specified.

303.10 Basis of Payment. The accepted quantities of compacted aggregate will be paid for at the contract unit price per megagram (ton), for the type specified, complete in place.

Payment will be made under:

Pay Item	Metric Pay Unit Symbol (English Pay Unit Symbol)
Compacted Aggregate, No. 53	Mg (TON)
Compacted Aggregate, No. 73	Mg (TON)

The cost of placing, compacting, water, and necessary incidentals shall be included in the costs of the compacted aggregate.

Payment will not be made for material placed outside of a one to one slope from the planned typical section.

Replacement or repair of pavement or shoulders damaged by the Contractor's operations shall be at no additional payment.

SECTION 304 – ASPHALT BASES

304.01 Description. This work shall consist of constructing an HMA base on a prepared surface or preparing an existing asphalt pavement for use as an asphalt base in accordance with 105.03.

MATERIALS

304.02 Materials. Materials shall be in accordance with the appropriate sections.

CONSTRUCTION

304.03 Sealing Cracks and Joints. Cracks and joints shall be sealed in accordance with 408.

304.04 Patching. Areas to be patched will be marked on the surface by the Engineer. The marked pavement shall be removed to the depth shown on the typical section or as directed. A minimum 50 mm (2 in.) vertical joint shall be constructed with the pavement that remains in place. If it is determined that the marked pavement is to be removed full depth, the patch depth shall be to the bottom of the existing asphalt material or as directed.

Subgrade or aggregate base under patches shall be compacted in accordance with 203.25. If the excavation for patches reveals unsuitable subgrade material, such material shall be removed to a depth of 150 mm (6 in.) and backfilled to the top of subgrade with compacted aggregate in accordance with 301. Unauthorized excavation beyond neat lines shall be replaced with compacted aggregate in accordance with 301.

The excavated patch areas shall be filled with HMA for patching of the type specified in the pay item. Partial depth patches shall use HMA intermediate mixture and full depth patches shall use HMA base mixture in accordance with 402. A MAF in accordance with 402.05 will not apply. Mixtures will be accepted in accordance with 402.09.

Each course shall be compacted by approved mechanical equipment in accordance with 409.03(d).

A smooth riding surface shall be maintained on HMA patches at all times. Deformations due to traffic or other conditions shall be corrected immediately. HMA base, intermediate, or surface mixtures may be used to maintain patches. Unless otherwise specified, patches shall be completed during daylight hours and opened to traffic at the close of the workday. Patches that cannot be completed prior to the end of daily operations shall be backfilled, compacted, and a temporary surface placed to carry traffic, unless otherwise permitted.

304.05 Widening. The outside face of the excavated area shall be left as nearly vertical as the nature of the material will permit and not wider than the outside limits of the widening section. The subgrade in the widened area shall be compacted in accordance with 207.

Widening mixtures shall be HMA mixtures in accordance with 402 and as shown on the typical section or as directed.

For widening 1 m (3.0 ft) or less and 180 kg/m^2 (330 lb/syd) or less, six passes of trench rollers in accordance with 409.03(d)5 shall be used. For widening 1 m (3.0 ft) or less and greater than 180 kg/m^2 (330 lb/syd), twelve passes of trench rollers in accordance with 409.03(d)5 shall be used.

For widening greater than 1 m (3.0 ft) and 180 kg/m^2 (330 lb/syd) or less, six passes of rollers with a compaction wheel bearing of no less than 5.3 kg/mm (300 lb/in.) shall be used. For widening greater than 1 m (3.0 ft) and greater than 180 kg/m^2 (330 lb/syd), twelve passes of rollers with a compaction wheel bearing of no less than 5.3 kg/mm (300 lb/in.) shall be used.

Except for surface mixtures, the course flush with the top of the existing surface shall be compacted with equipment entirely on the widening.

A MAF in accordance with 401.05 or 402.05 will not apply. HMA mixtures will be accepted in accordance with 402.09.

304.06 Method of Measurement. Widening and patching will be measured by the megagram (ton) of the type of HMA specified, in accordance with 109.01(b). Compacted aggregates for base will be measured by the megagram (ton) in accordance with 109.01(b).

304.07 Basis of Payment. The accepted quantities for widening and patching will be paid for at the contract unit price per megagram (ton), of the type of HMA specified, complete in place. Compacted aggregates for base will be paid for in accordance with 301.10.

Payment will be made under:

Pay Item	Metric Pay Unit Symbol (English Pay Unit Symbol)
HMA Patching, Type *	Mg (TON)
Widening with HMA, Type *	Mg (TON)

* Mixture Type in accordance with 402.04

Excavation for patching will not be paid for separately but shall be included in the cost of the patching material.

The cost of furnishing, storage, hauling, and placing of all materials; pavement removal as required; temporary pavement required to carry traffic; choke aggregate required to eliminate pickup; disposal; excavation; preparation of subgrade; compacting; and finishing except as otherwise provided shall be included in the cost of the patching materials.

The cost of excavation and disposal of existing materials required for the compacted aggregate or HMA widening material shall be included in the cost of the HMA widening material.

Replacement of pavement damaged by the Contractor's operations shall be at no additional payment.

SECTION 305 - CONCRETE BASES

305.01 Description. This work shall consist of constructing a PCC base on a prepared surface or preparing an existing concrete surface for use as a base all in accordance with 105.03.

MATERIALS

305.02 Materials. Materials shall be in accordance with the following:

Asphalt for Undersealing 612.02
Coarse Aggregate, Class A or Higher, Size No. 8.....904
Coarse Aggregate, Class D or Higher, Size No. 53 904
Coarse Aggregate, Class D or Higher, Size No. 73 904

CONSTRUCTION REQUIREMENTS

305.03 New PCC Base. Construction of new PCC bases shall be in accordance with 502, except for 502.14 and 502.20. The surface shall be finished with wet burlap or by wood floats. Smoothness of the base will be controlled with a 4.9 m (16 ft) long straightedge longitudinally and a 3 m (10 ft) long straightedge transversely.

Joints shall be in accordance with 503, except for the following:

(a) The second saw cut and sealing shall not be performed for transverse joints;

(b) Sealing shall not be performed for longitudinal joints; and

(c) Sawing and sealing shall not be performed for construction joints.

305.04 Existing PCCP. Preparation of PCCP for use as a base shall be in accordance with 507, except for:

(a) Patching. Patching PCC base shall be in accordance with 506 except the coarse aggregate shall be Class A or Higher.

(b) Surface Milling. Surface milling shall be in accordance with 306.07.

(c) Retro Load Transfer. Retrofit load transfer shall be in accordance with 507.08.

(d) Rubblizing Existing PCCP. The existing pavement shall be rubblized with a self-contained, self-propelled, resonant frequency pavement breaking unit capable of producing low amplitude, 8900 N (2000 lbf) blows at a rate of not less than 44 per s or with a self-contained, self-propelled, multiple headed, impact hammer with the heads directly adjacent to each other and the lift height of each head independently

adjustable. The sequence of impacts shall be on a random basis. The unit shall be equipped with a water system to suppress dust generated by the operation.

The operating speed of the unit shall be such that the existing pavement is reduced to particles ranging from sand sized to pieces not exceeding 150 mm (6 in.) in the largest dimension, the majority being a nominal 25 to 50 mm (1 to 2 in.) in size. The concrete from the surface to the top of the reinforcement shall be reduced to the 25 to 50 mm (1 to 2 in.) size to the fullest extent possible. Continuous coverage, overlapped if necessary, with the breaking shoe or impact hammers shall be used. Additional passes of the resonator or multiple headed impact hammer may be required if larger sizes remain above the reinforcement.

Subsurface drains shall be installed along the edges of the pavement prior to the rubblization.

Rubblizing shall begin at the edge of pavement and proceed to the center of the pavement. The rubblization of the first lane shall extend 150 mm (6 in.) into the adjoining lane.

Prior to placing the HMA mixtures, the complete width of the rubblized pavement shall be compacted by means of vibratory steel wheel and pneumatic-tired rollers in accordance with 409.03 in the following sequence; two initial passes with a vibratory roller, two passes with a pneumatic-tired roller, and then four final passes with a vibratory roller. The last two roller passes shall be immediately prior to priming operations. When the multiple headed impact hammer is used, a Z-pattern grid cladding bolted to the surface of the drum of the vibratory roller shall be used at least for the final two passes.

The vibratory roller shall be operated in the vibration mode at a speed not to exceed 1.8 m (6 ft) per s. All depressions 25 mm (1 in.) or greater in depth from that of the immediate surrounding area that result from the rubblizing or compaction effort shall be filled with coarse aggregate No. 53 or 73 and struck off level with the surrounding area. Filled depressions shall be compacted with the same roller and compactive effort previously described.

Reinforcement in the rubblized pavement shall be left in place. Any reinforcement protruding above the surface as a result of rubblizing or compaction operations shall be cut off below the surface and removed from the site. All loose joint fillers, expansion material, or other similar materials shall also be removed from the rubblized surface.

Traffic will not be allowed on the rubblized pavement before the HMA base or intermediate courses are in place unless otherwise directed. Rubblized material dislodged by traffic shall be removed from the pavement. The initial HMA course shall be placed within 48 h of rubblizing. However, in the event of rain, this time limitation may be waived to allow sufficient time for the rubblized pavement to dry to the satisfaction of the Engineer. Crossover and ramp crossings shall be maintained in the same compacted state as other areas until the initial HMA course is placed.

The preceding rubblizing operations shall be scheduled after widening or shoulder work has progressed up to the elevation of the existing pavement grade. These areas may then be utilized to support the breaking unit while the existing pavement is being rubblized. Shoulders may then be completed in conjunction with the placement of HMA pavement courses over the compacted rubblized pavement.

A joint shall be saw cut full depth or load transfer devices shall be severed at an existing joint on ramps or mainline where the rubblizing abuts concrete pavement which is to remain in place.

305.05 Widening With PCC Base. The subgrade shall be prepared in accordance with 207. Subbase shall be in accordance with 302.

The concrete shall be placed directly against the existing pavement edges, which shall be free from all foreign materials. The surface of the concrete widening shall be at the same elevation as the top of the existing concrete base.

Materials and construction requirements shall be in accordance with the applicable requirements of 502, except the following.

(a) coarse aggregate shall be Class A or higher;

(b) joints shall be sawed in one pass and not sealed. Transverse joints constructed in the widening shall be aligned with existing transverse joints or cracks;

(c) tining is not required;

(d) shoulder corrugations are not required; and

(e) pavement smoothness shall be controlled by a 4.9 m (16 ft) straightedge.

When the widening is not open to traffic prior to placing an overlay, liquid membrane compounds shall not be used and an alternative curing option shall be used. AE-T in accordance with 406 may be used as a curing option.

305.06 Method of Measurement. Compacted aggregate will be measured by the megagram (ton) in accordance with 109.01(b) for the type specified. Retrofit load transfer will be measured in accordance with 507.09. Surface milling will be measured in accordance with 306.09. PCC base, PCC base patching, and widening with PCC base will be measured by the square meter (square yard) of the thickness specified. The area of PCC will be the planned width of the base, patching or widening multiplied by the measured length or as directed in writing. The planned width of the base, patching and widening will be as shown on the typical cross section of the plans.

Rubblized PCCP will be measured by the square meter (square yard) of rubblized pavement.

305.07 Basis of Payment. The accepted quantities of compacted aggregate will be paid for in accordance with 303.10, for the type specified, complete in place. Retrofit load transfer will be paid for in accordance with 507.10. Surface milling will be paid for in accordance with 306.10. PCC base, PCC base patching, and widening with PCC base will be paid for at the contract unit price by the square meter (square yard) of the thickness specified.

Rubblized PCCP will be paid for at the contract unit price per square meter (square yard) for rubblized pavement.

Payment will be made under:

Pay Item	Metric Pay Unit Symbol (English Pay Unit Symbol)
PCC Base, _____mm (thickness)	m2
(PCC Base, _____in. (thickness)	SYS)
PCC Base Patching, _____mm (thickness)	m2
(PCC Base Patching, _____in. (thickness)	SYS)
Rubblized PCCP	m2 (SYS)
Widening With PCC Base, _____mm (thickness)	m2
(Widening With PCC Base, _____in. (thickness)	SYS)

If PCC base is found to be deficient in thickness, price adjustments in accordance with 502.23 will be determined.

The cost of excavation, disposal of existing materials, preparation of subgrade, and subbase required for the PCC base widening shall be included in the cost of widening with PCC base.

The cost of excavation, disposal of existing materials, preparation of subgrade, and subbase required for PCC base patching shall be included in the cost of PCC base patching.

Replacement of pavement damaged by the Contractor's operations shall be without additional payment.

The cost of furnishing all labor, materials, and equipment necessary to rubblize, suppress dust, cut and remove exposed reinforcement, cut and remove joint fillers or similar materials, saw cutting of the pavement, severing existing joints, compacting and maintaining the compacted condition of the rubblized pavement shall be included in the cost of rubblized PCCP.

The cost of furnishing, hauling, placing, leveling, and compacting the aggregate to fill the depressions in the rubblized PCCP shall be included in the cost of coarse aggregate No. 53 or 73.

SECTION 306 – MILLING

306.01 Description. This work shall consist of the milling of asphalt and concrete pavements and the disposal of milled materials.

CONSTRUCTION REQUIREMENTS

306.02 General. Milling operations shall be described in the QCP in accordance with ITM 803. Where the milling operation in a partial-day closure results in a vertical or near vertical face exceeding 38 mm (1.5 in.) in height, the adjacent lane shall be milled during the same day, the milled lane resurfaced during the same day, or the vertical face tapered at a 45° angle or flatter. Where located within 75 mm (3 in.) of a curb, surface material that cannot be removed by the cold-milling machine shall be removed by other approved methods.

Transverse milled vertical faces greater than 25 mm (1 in.) that are exposed to traffic shall be transitioned in an approved manner.

Castings located in milling areas that are not to be adjusted may remain in place during the milling, or may be removed and replaced at the Contractor's option.

Localized weak areas uncovered by the milling process shall be patched in accordance with 304 or 305.

The milled material shall become the property of the Contractor, unless otherwise specified.

The roadway shall be cleaned before opening to traffic.

306.03 Equipment. Equipment for milling shall be in accordance with the following.

(a) Roadway Milling Machine. A milling machine shall be a power operated cold-milling machine, equipped with automatic control devices to establish profile grades by referencing from either the existing pavement or from independent grade control. The equipment shall have a positive means of controlling cross slope elevations, have an effective means for removing excess material from the surface, preventing airborne dust escaping from the operation, and producing a finished surface that provides a good bond to the new overlay. Sufficient cutting teeth shall be on the cutting drum to produce cuttings such that 90% of the conglomerate particles pass a 50 mm (2 in.) sieve.

(b) Power Saw. Sawing equipment shall be capable of maintaining the specified alignment and depth of cut without damaging the pavement.

(c) Rotary Power Broom. A motorized, pneumatic tired unit with rotary bristle broom head.

(d) Straightedge.

1. Straightedge – 4.9 m (16 ft). A 4.9 m (16 ft) straightedge shall be a rigid beam mounted on two solid wheels on axles 4.875 m (16 ft) apart. The straightedge has a mounted push bar to facilitate propelling the device along or across the pavement. Tolerance points are located at the 1/4, 1/2, and 3/4 points and may be composed of threaded bolts capable of being adjusted to the tolerance required.

2. Straightedge – 3 m (10 ft). A 3 m (10 ft) straightedge is the same as a 4.9 m (16 ft) straightedge except that the wheels are mounted 3.048 m (10 ft) apart. A handheld rigid beam may be substituted.

306.04 Asphalt Scarification and Profile Preparation. Asphalt scarification and profile preparation shall consist of preparing a base for resurfacing by removing existing asphalt material. The entire existing asphalt surface shall be roughened by the operations. The existing pavement shall be milled to the cross-slope as shown on the plans, and shall have a surface finish that does not vary longitudinally more than 6 mm (1/4 in.) from a 4.9 m (16 ft) straightedge or as described in the QCP in accordance with 401.02. The milled surface shall have macrotexture equal to or greater than 2.2 for single course overlays and 1.8 for multiple course overlays in accordance with ITM 812. Frequency of macrotexture testing shall be a minimum of once per day and shall be described in the QCP. The cross-slope shall not vary more than 3 mm (1/8 in.) when measured with a 3 m (10 ft) straightedge.

Milled mainline areas left open to traffic for longer than 5 work days will be assessed $1000.00 per day per lane kilometer ($1600 per day per lane mile), or portion thereof, as liquidated damages, not as a penalty, but as damages sustained for each work day that the milled area remains open to traffic.

306.05 Asphalt Milling. Asphalt milling shall consist of preparing a base for resurfacing by removing the existing asphalt material at a specified average depth. The existing pavement shall be milled to the cross-slope as shown on the plans, and shall have a surface finish that does not vary longitudinally more than 6 mm (1/4 in.) from a 4.9 m (16 ft) straightedge or as described in the QCP in accordance with 401.02. The milled surface shall have macrotexture equal to or greater than 2.2 for single course overlays and 1.8 for multiple course overlays in accordance with ITM 812. Frequency of macrotexture testing shall be a minimum of once per day and shall be described in the QCP. The cross-slope shall not vary more than 3 mm (1/8 in.) when measured with a 3 m (10 ft) straightedge.

If shoulders or turn lanes are not milled and the overlay material is not placed in the milled areas within the same day, drainage slots shall be provided to eliminate ponding of water.

Milled mainline areas left open to traffic for longer than 5 work days will be assessed $1000.00 per day per lane kilometer ($1600 per day per lane mile), or portion

thereof, as liquidated damages, not as a penalty, but as damages sustained for each work day that the milled area remains open to traffic.

306.06 Asphalt Removal. Asphalt removal shall consist of complete removal of asphalt by milling from a portland cement concrete or brick base and the satisfactory disposal of the milled materials. Minor amounts of asphalt pavement material bonded to a concrete base at joints or cracks may remain in place. If this material becomes displaced during subsequent operations it shall be removed. Minor amounts of asphalt pavement material bonded to a brick base may remain in place. Removal of minor areas of portland cement concrete or brick base during the milling operations is acceptable.

Milled areas shall be cleaned prior to reopening to traffic or before continuing construction operations.

306.07 PCCP Milling. PCCP milling shall consist of preparing a base for resurfacing by removing the existing PCCP material at a specified average depth. The existing pavement shall be milled to the cross-slope as specified in the plans, and shall have a surface finish that does not vary longitudinally more than 6 mm (1/4 in.) from a 4.9 m (16 ft) straightedge or as described in the QCP in accordance with 401.02. The milled surface shall have macrotexture equal to or greater than 1.8 in accordance with ITM 812. Frequency of macrotexture testing shall be a minimum of once per day and shall be described in the QCP. The cross-slope shall not vary more than 3 mm (1/8 in.) when measured with a 3 m (10 ft) straightedge or as directed by the Engineer.

A milled surface shall not be left open to traffic for longer than 14 calendar days. If the milled surface is not overlaid after 14 calendar days, $1000.00 per day per lane kilometer ($1600 per day per lane mile), or portion thereof, will be assessed as liquidated damages, not as a penalty, but as damages sustained for each calendar day that the milled area remains left open to traffic.

306.08 Transition Milling. Transition milling shall consist of cutting a wedge at the beginning and ending of projects, drives, paving exceptions and public road approaches. The existing pavement shall be cut to provide a vertical face of 38 mm (1.5 in.) for the termini of each overlay lift of base, intermediate, or surface. The existing pavement shall be milled at a rate of 60:1 or as directed to achieve the specified cut where the pavement transition overlay lifts differ from cut depth. Pavement transitions for driveways and public road approaches will only be cut for the surface course.

Automatic control devices will not be required on surface milling equipment used for transitions cut off the mainline. Cutting shall not damage any pavement that is to remain in place.

306.09 Method of Measurement. Asphalt milling, asphalt removal, PCCP milling, scarification/profile milling, and transition milling will be measured by the square meter (square yard) of the milled area.

306.10 Basis of Payment. Asphalt milling, asphalt removal, PCCP milling, scarification and profile milling, and transition milling will be paid for at the contract unit price per square meter (square yard).

Payment will be made under:

Pay Item	Pay Unit Symbol
Milling, Asphalt, _____mm (in.) thickness	m2 (SYS)
Milling, Asphalt Removal	m2 (SYS)
Milling, PCCP	m2 (SYS)
Milling, Scarification/Profile	m2 (SYS)
Milling, Transition	m2 (SYS)

The cost for castings removed and replaced at the Contractor's option in accordance with 306.02 shall be included in the cost of the milling.

Any portion of the pavement that is damaged or removed outside the milling limits shall be replaced with no additional payment.

The cost of tapering of vertical faces and removal of milled material from the project site shall be included in the cost of milling.

The cost of cutting of the surface course shall be included in the milling.

SECTION 307 - Blank

SECTION 308 - Blank

SECTION 309 - Blank

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